Printing and Publishing

Summer/1976

U.S. DEPARTMENT OF COMMERCE | Domestic and International Business Administration
Bureau of Domestic Commerce

QUARTERLY INDUSTRY REPORT

3 Plant Capacity of Printing and Publishing Firms

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The Secretary of Commerce has determined that the publication of this periodical is necessary in the transaction of the public business required by law of this Department. Use of funds for printing this periodical has been approved by the Director of the Office of Management and Budget through May 31, 1978.

For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C., 20402, or through any U.S. Department of Commerce district office. Annual subscription $3.00 (75 cents additional for foreign mailing).

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PLANT CAPACITY OF U.S. PRINTING AND PUBLISHING ESTABLISHMENTS

By William S. Lofquist

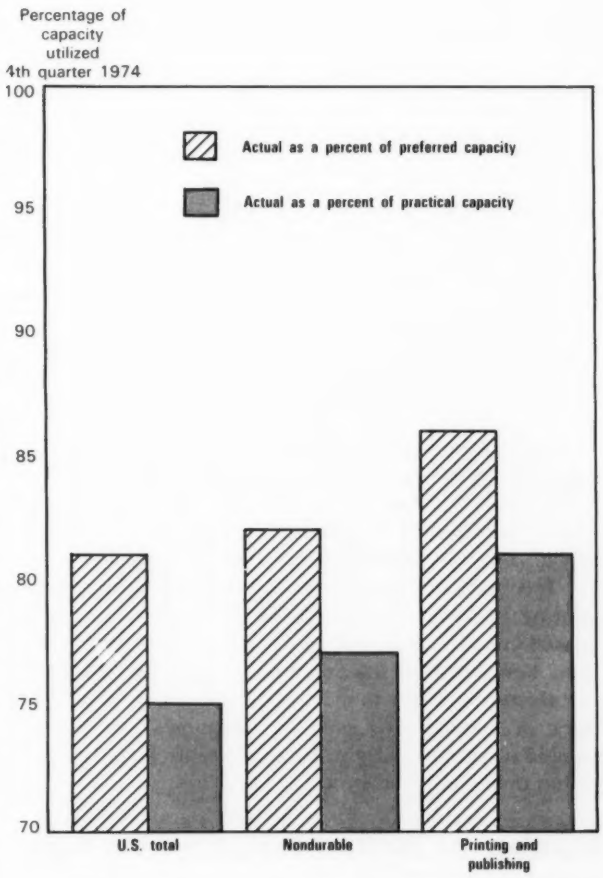
By the last quarter of 1974 the U.S. economy had displayed most of the signs of a full-scale recession. The gross national product (in constant dollars) was off 2.3% from third quarter 1974 and 4.9% below the fourth quarter of 1973, representing the 4th consecutive quarter of U.S. business activity decline. Personal consumption expenditures—which showed improvement in the second and third quarters of 1974—fell 3.5% in the fourth quarter, a partial reflection of the 12% rate of inflation encountered by the nation at the close of 1974. Under these inauspicious conditions the Bureau of the Census conducted in the 4th quarter of 1974 a detailed survey of plant capacity by 9,174 U.S. manufacturing establishments, including 281 firms in the graphic arts industries.

Plant Utilization

Data collected by the Bureau of the Census show that printers and publishers had relatively high plant utilization ratios in the 4th quarter of 1974, compared to other manufacturing industries. As illustrated in chart A, the actual operations of the surveyed graphic arts firms came to 86% of preferred plant capacity; in contrast, 4th quarter 1974 actual as a percentage of preferred capacity for total U.S. manufacturing was 81% and total U.S. nondurable manufacturing was just 82%. "Preferred" levels of operations are defined as an intermediate level of operations between actual operations and practical capacity, on the other hand, is defined as the greatest level ceed due to cost or other considerations. Practical capacity, on the other hand is defined as the greatest level of output the plant could achieve within the framework of a realistic work pattern.

The high ratios of plant utilization exhibited by U.S. graphic arts firms may result from a combination of factors including (1) the 4th quarter of each year is generally the industry's most active, (2) printing and publishing activity is thought by some economists to be a lagging economic indicator, e.g., the industry had yet to feel the full weight of the nation's recession, and (3) even in a recession some important graphic arts activities, in particular the sale of books and other published materials, tend to withstand economic downturns with greater vigor than other sectors of the economy.

Chart A.—Plant Capacity Utilization Ratios for 4th Quarter 1974



Source: U.S. Department of Commerce, Bureau of the Census.

Reasons for Plant Operations

Table 1 provides a listing of the reasons for U.S. plants operating at less than 100% of practical capacity. Respondents frequently gave more than one reason, but were requested to give such reasons a priority rating.

Table 1.—Reasons for Operating at Less Than 100 Percent of Practical Capacity in the Fourth Quarter 1974

(Data are a percentage distribution of employment-weighted establishments who responded to this question)

Reason	Total	Priority assigned			Standard error of estimate (percent) for total column
		1	2	3	
United States, total[1]	142	100	29	14	3
Insufficient orders	85	81	3	1	3
Inadequate labor force	19	7	9	4	2
Lack of fuel or electric energy	5	1	2	3	2
Lack of materials or supplies	24	6	13	5	2
Strikes or other work stoppages	2	1	1	-	2
Other (fire, flood, etc.)	7	4	2	1	2
Nondurable, total[1]	138	100	26	11	3
Insufficient orders	87	83	3	1	3
Inadequate labor force	16	5	8	3	2
Lack of fuel or electric energy	4	-	1	2	2
Lack of materials or supplies	21	5	12	4	2
Strikes or other work stoppages	2	1	-	-	2
Other (fire, flood, etc.)	8	6	2	1	2
Printing and publishing, total[1]	133	100	24	10	7
Insufficient orders	91	(D)	(D)	-	6
Inadequate labor force	16	(D)	12	(D)	3
Lack of fuel or elctric energy	2	-	-	2	2
Lack of materials or supplies	17	(D)	10	(D)	3
Strikes or other work stoppages	(D)	(D)	-	-	2
Other (fire, flood, etc.)	(D)	4	(D)	(D)	3

Note: Detail may not add to total because of individual rounding. Some establishments which reported actual operations less than 100 percent of practical capacity did not give a reason and are excluded from this table. Some respondents gave more than one reason. Repsondents with more than one reason assigned priorities to their reasons which are reflected in this table.

-Represents zero.

(D) Withheld to avoid disclosing figures for individual companies.

[1]The total of the reasons and priorities add to more than 100 percent because some respondents gave more than one reason for operating at less than 100 percent practical capacity. For instance, at the U.S. level the figure of 142 percent indicated that 1.42 percent reasons were given per respondent.

Source: U.S. Department of Commerce, Bureau of the Census.

Not surprisingly, the dominant reason given for operating at less than practical capacity was the lack of sufficient orders. This far outweighted other responses, including inadequate labor force, lack of fuel or electric energy, and lack of materials or supplies.

The reasons offered by establishments engaged in printing and publishing showed little variation from reasons cited by other manufacturing plants. Graphic arts firms, however, gave somewhat less weight than most U.S. manufacturing plants to the "inadequate labor force" and "lack of materials or supplies" responses and placed somewhat greater weight to the "insufficient orders" reason than that of most other U.S. firms.

Number of Shifts Desired by Management

Although graphic arts firms were running at higher plant capacity ratios than the average U.S. manufacturing establishment in 1974's 4th quarter, printer and publishers expressed room for improvement in the number of shifts they were operating during this period. Table 2 shows the distribution of work shifts by total U.S. industry, the nondurable sector of U.S. industry and the printing and publishing industry. In this table, columns A and E represent actual shift operations of plants for 1974's 4th quarter. Printing and publishing firms reported that 52% of their establishments used 1-shift, 26% employed a 2-shift operation, and 22% had a 3-shift program.

Printers and publishers were asked by Census to determine the number of shifts they would "normally" employ under the conditions of (1) preferred capacity, and (2) practical capacity, and their responses are shown in both table 2 and graphically in chart B.

In considering **preferred** capacity and the 52% of printing and publishing firms using 1-shift, 40% stated they would continue with just 1-shift while 10% would have preferred to employ a 2nd shift and 2% would have preferred to move to a 3-shift basis. With 26% of graphic arts firms at the 2-shift level, 20% wished to remain at this level and 6% wished to move to 3-shifts. Finally, all 22% of graphic arts firms employing a 3-shift operation desired to remain on this level. In contrast, note that of the 27% of total U.S. firms operating the 3-shift level, 1% wanted to move down to a 2-shift status.

Under the conditions of shift operation at practical capacity and those 36% of printing and publishing plants operating at the 1-shift level, 11% desired to incorporate a 2-shift workforce and 4% wished to move to a 3-shift

Table 2.—Comparison of Number of Shifts at Actual Production to the Number of Shifts at Preferred and Practical Capacity, for Fourth Quarter 1974

(Data are a percentage distribution of employment-weighted establishments who responded to this question)

Actual shifts operated[1]	Shifts at preferred capacity				Shifts at practical capacity				Standard error of estimate (percent) for column (H)
	Total (A)	0.0-1.9 (B)	2.0-2.9 (C)	3.0-over (D)	Total (E)	0.0-1.9 (F)	2.0-2.9 (G)	3.0-over (H)	
United States, total	100	30	35	34	100	26	32	43	(NA)
0.0-1.9	45	30	13	2	45	26	14	5	2
2.0-2.9	28	-	21	6	28	-	17	11	2
3.0-over	27	-	1	26	27	-	1	27	2
Nondurable, total	100	36	22	41	100	33	20	46	(NA)
0.0-1.9	45	36	8	1	45	33	9	3	2
2.0-2.9	19	-	14	5	19	-	11	8	2
3.0-over	35	-	-	35	35	-		35	2
Printing and publishing, total	100	40	30	30	100	36	28	35	(NA)
0.0-1.9	52	40	10	2	52	36	11	4	3
2.0-2.9	26	-	20	6	26	-	17	9	3
3.0-over	22	-	-	22	22	-	-	22	3

Note: Detail may not add to total due to independent rounding.

- Represents zero.
(NA) Not available.
[1]The number of shifts each plant reported at actual production is compared to the number of shifts it would utilize at preferred and practical capacities.

Source: U.S. Department of Commerce, Bureau of the Census.

operation. Those graphic firms with current 2-shift operations (26%) stated that 17% wished to remain 2-shift while 9% wanted to increase to 3-shifts.

Examination of U.S. printing and publishing firms indicates that 82% of these establishments (40% + 20% + 22%) would use the same number of shifts at **preferred** capacity as are presently being used, and 75% of these firms (36% + 17% + 22%) would use the same number of shifts at **practical** capacity as are currently being used in actual operations.

Reaching Plant Capacity

Printers and publishers whose plants were operating at less than 100% of either preferred or practical capacities were asked to estimate (1) how long it would take to reach these levels (assuming there was sufficient demand for their output), and (2) once these levels were reached, how long such levels could be maintained. Responses to these questions appear in tables 3 and 4.

Assuming that the average graphic arts firm wanted to achieve the plant operating characteristics of **preferred** capacity (e.g., an intermediate level of operations between actual operations and practical capacity which the firm would prefer not to exceed due to cost or other considerations), 60% of the firms surveyed indicated that this level could be reached in 1 month or less, 29% estimated it would take from 2 to 6 months, and 4% believed that more than 6 months would be needed to attain a preferred capacity level (see table 3).

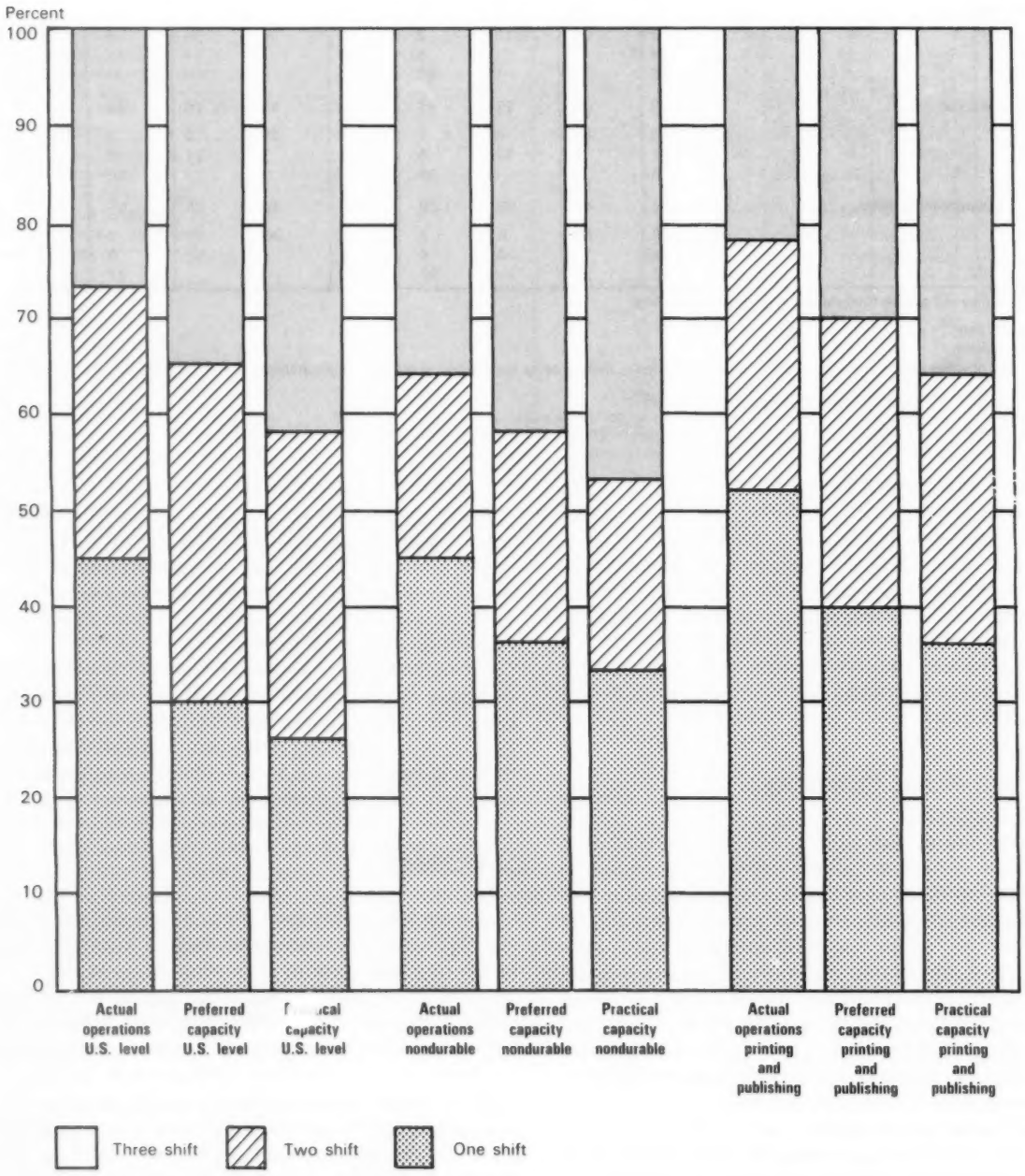
Under the assumption of plant operation at **practical** capacity (e.g., the greatest level of output a plant could achieve within the framework of a realistic work pattern), it was reported that 61% of the printing and publishing firms could achieve this operating level in 1 month or less while 32% of the plants would require from 2 to 6 months to meet this standard (see table 4).

Very few graphic arts firms could reasonably estimate how long either preferred or practical capacity could be maintained once it was achieved; data on those select printing and publishing plants who were able to respond to this question were not shown in order to prevent disclosure of individual company information.

Summary

In the 4th quarter the 1974 U.S. printing and publishing establishments were operating at generally higher levels of plant capacity than that of most other U.S. manufacturing facilities. But such statistics have meaning primarily for those firms whose products are the result of their own plants' manufacture. Relating plant capacity, for example, to a small-or medium-sized publisher of books or magazines who contracts out the printing of such products to other provides extreme if not impossible problems of measurement. The relevance of plant capacity ratios takes on substantial importance, however, to the nations large printers—of newspapers, magazines, books, catalogs, business forms, greeting cards, shoppers, advertising materials and a wealth of other graphic arts

Chart B.—Number of Shifts at Actual Production, Preferred Capacity, and Practical Capacity, for 4th Quarter 1974



Source: U.S. Department of Commerce, Bureau of the Census.

Table 3.—Distribution of the Time To Expand To Preferred Capacity and Length of Time That Operating Rate Could Be Maintained, Fourth Quarter 1974

(Data are a percentage distribution of employment-weighted establishments who responded to this question)

Time to expand actual operations to preferred capacity	Total	Length of time preferred capacity could be maintained (months)						Standard error of estimate (percent) for total column
		Indefinitely	1	2-3	4-6	More than 6	No response to question	
United States, total	100	78	-	1	1	1	19	3
No response to question[1]	2	2	-	-	-	-	-	2
1 week or less	16	12	-	-	-	-	4	2
2 weeks to 1 month	36	28	-	-	-	1	7	2
2-3 months	24	19	-	-	-	-	4	2
4-6 months	14	11	-	-	-	-	2	2
More than 6 months	6	5	-	-	-	-	1	2
Impractical to expand to preferred level	2	1	-	-	-	-	1	2
Nondurable, total	100	74	-	1	1	1	23	3
No response to question[1]	2	2	-	-	-	-	-	2
1 week or less	25	18	-	-	-	-	7	3
2 weeks to 1 month	41	31	-	-	-	1	8	3
2-3 months	19	14	-	-	-	-	4	2
4-6 months	7	5	-	-	-	-	2	2
More than 6 months	3	2	-	-	-	-	1	2
Impractical to expand to preferred level	2	1	-	-	-	-	1	2
Printing and publishing, total	100	76	-	-	(D)	(D)	22	7
No response to question[1]	4	4	-	-	-	-	-	3
1 week or less	32	23	-	-	-	(D)	(D)	4
2 weeks to 1 month	28	23	-	-	-	-	5	4
2-3 months	17	12	-	-	-	-	5	3
4-6 months	12	10	-	-	(D)	-	(D)	3
More than 6 months	4	(D)	-	-	-	-	(D)	3
Impractical to expand to preferred level	3	(D)	-	-	-	-	(D)	3

Note: Detail may not add to total due to independent rounding.

-Represents zero.

(D)Withheld to avoid disclosing data for individual companies.

[1]Respondents who answered either the question on time to expand to preferred capacity or the length of time preferred capacity could be maintained are included in this table.

Source: U.S. Department of Commerce, Bureau of the Census.

related products. Intensive capacity utilization becomes a measurement of managements' success. This 1974 study, and future plant capacity reports by the Bureau of the Census, should provide U.S. industry with essential benchworks by which individual firms' performances can be assessed.

The complete Census report *Survey of Plant Capacity, 1974*, MQ-CI(74)-1, is available—at a price of 75 cents—through the Subscriber Services Section (Publications), Bureau of the Census, Washington, D.C. 20233, or any U.S. Department of Commerce Field Office.

Table 4.—Distribution of the Time To Expand to Practical Capacity and Length of Time That Operating Rate Could Be Maintained, Fourth Quarter 1974

(Data are a percentage distribution of employment—weighted establishments who responded to this question)

Time to expand actual operations to practical capacity	Total	Length of time practical capacity could be maintained (months)						Standard error of estimate (percent) for total column
		Indef-initely	1	2-3	4-6	More than 6	No response to question	
United States, total	100	73	-	1	2	2	21	3
No response to question[1]	1	1	-	-	-	-	-	2
1 week or less	14	10	-	-	-	-	4	2
2 weeks to 1 month	33	25	-	-	1	1	7	2
2-3 months	23	17	-	-	1	1	4	2
4-6 months	16	13	-	-	-	-	3	2
More than 6 months	9	6	-	-	-	-	2	2
Impractical to expand to practical capacity	3	2	-	-	-	-	1	2
Nondurable, total	100	71	-	1	2	2	24	3
No response to question[1]	1	1	-	-	-	-	-	2
1 week or less	23	15	-	-	-	-	7	2
2 weeks to 1 month	39	29	-	-	1	1	8	3
2-3 months	21	15	-	1	-	-	5	2
4-6 months	10	7	-	-	-	-	2	2
More than 6 months	3	2	-	-	-	-	1	2
Impractical to expand to practical capacity	3	2	-	-	-	-	1	2
Printing and publishing, total	100	70	-	(D)	(D)	(D)	26	7
No response to question[1]	(D)	(D)	-	-	-	-	-	(X)
1 week or less	30	20	-	-	-	-	9	4
2 weeks to 1 month	31	26	-	-	-	-	5	4
2-3 months	16	9	-	(D)	-	-	(D)	3
4-6 months	16	12	-	-	-	-	4	3
More than 6 months	(D)	2	-	-	-	-	(D)	(X)
Impractical to expand to practical capacity	2	(D)	-	-	-	-	(D)	2

Note: Detail may not add to total due to independent rounding.

-Represents zero.

(D)Withheld to avoid disclosing data for individual companies.

(X)Not applicable.

[1]Respondents who answered either the question on time to expand to practical capacity or the length of time practical capacity could be maintained are included in this table.

Source: U.S. Department of Commerce, Bureau of the Census.

GROWTH PACE OF FIFTY LARGEST PRINTING CENTERS TRAILS NATION'S PRINTING ACTIVITY

By Rose Marie Bratland

The 50 major U.S. metropolitan printing centers in 1972 showed a high level of concentration. According to the 1972 Census of Manufactures, the Nation's 50 largest commercial printing centers accounted for 62% of all U.S. commercial printing establishments, 71% of the industry's total employment and 75% of total value added for the printing industry.

In the period 1967-72, four of the 50 ceners reported a loss in the number of commercial printing establishments and only one experienced a decline in value added by manufacture. However, employment fell off in 20 of the 50 centers.

Commercial printing data presented in table 6 was obtained from the Census of Manufactures Standard Industrial Classification (SIC) 275, Commercial Printing. The designation of these 50 Standard Metropolitan Statistical Areas (SMSA's) as major printing centers was determined on the basis of value added by manufacture.

SMSA Classification

The geographic unit used in defining a metropolitan center is the standard metropolitan statistical area (SMSA). The Bureau of the Census defines a standard metropolitan statistical area as an integrated economic and social unit with a large volume of daily travel and communication between the central city (having 50,000 or more population) and outlying parts of the area. Each area (except in New England) consists of one or more whole counties. An SMSA may contain more than one city of 50,000 population and may cross state lines. The definition for an SMSA is designed to serve a wide variety of statistical and analytical pruposes. Although changes were made in some of the definitional boundaries of the 50 SMSA's between 1967 and 1972, the changes were not significant enough to effect the comparability of most data for these two Census years. Special cases in which comparability may be a factor are pointed out in the footnotes to table 6.

Table 6 also includes the only two Standard Consolidated Areas (SCA)—New York and Chicago—for which Census publishes data. Several SMSA's are included in both New York and Chicago; four of the SMSA's making up the New York SCA are ranked separately in table 6. (See footnotes 3 and 7 in table 6 for complete SMSA listings of SCA's.)

Heavy Concentration in Top Ten

Table 5 shows the 10 largest U.S. commercial printing SMSA's in 1972 ranked on the basis of value added by manufacture, number of employees and number of establishments. Establishments for these 10 SMSA's represented nearly two-fifths of all U.S. commercial printing establishments in 1972. Their employees accounted for 43% of the Nation's commercial printing labor force, and the value added by manufacture for the 10 centers amounted to 47% of the industry's total value added.

Table 5.—Ranking of the Ten Largest U.S. Printing Centers, 1972

Standard metropolitan statistical area	Ranking		
	Value added by manufacture	Number of employees	Number of establishments
New York, N.Y.	1	1	1
Chicago, Ill.	2	2	2
Los Angeles-Long Beach, Calif.	3	3	3
Philadelphia, Pa.—N.J.	4	4	4
San Francisco, Calif.	5	5	5
Minneapolis-St. Paul, Minn.	6	7	14
Detroit, Mich.	7	8	7
Milwaukee, Wis.	8	9-11	18
Boston, Mass.	9	6	6
Washington, D.C.-Md.-Va.	10	9-11	11

Source: *1972 Census of Manufacturers*, Bureau of the Census, U.S. Department of Commerce.

While New York, Chicago, Los Angeles, and Philadelphia maintained their rank among the top 10 SMSA's, San Francisco surpassed Minneapolis-St. Paul which ranked fifth in value added in 1967. The top 5 SMSA's rankings for value added, number of employees and number establishments all paralleled one another; however, among the remaining centers in the top 10 ranking, there were some noticeable exceptions in industrial importance. For example, while Minneapolic-St. Paul ranked sixth in value added and seventh in employment among the 10, this SMSA ranked fourteenth in number of establishments. In contrast, Boston ranked ninth in value added yet held sixth place among the top 10 in both number of employees and plants. Dayton and Cincinnati, Ohio, were among the 10 major printing SMSA's in 1967, but in 1972, Milwaukee and Washington, D.C., replaced these centers.

Table 6.—Fifty Largest Metropolitan Printing Centers, 1972

Standard metropolitan statistical area	Number of establishments			Number of employees (in thousands)				Value added by manufacture (in million $)			
	1972	1967	Percent change 1967-72	1972	1967	Percent change 1967-72	1972 area rank	1972	1967	Percent change 1967-72	1972 area rank
United States, total	22,070	19,497	13.2	340.5	330.6	3.0	(X)	5,637.0	3,944.4	42.9	(X)
50 largest centers, total	13,710	12,309	11.1	242.7	248.7	-2.4	(X)	4,241.2	3,054.0	38.9	(X)
Albany-Schenectady-Troy, N.Y.[1]	83	64	29.7	1.6	2.7	-40.7	39-41	22.1	27.6	-19.9	43
Allentown-Bethlehem-Easton, Pa.-N.J.[1]	59	49	20.4	1.6	1.9	-15.8	39-41	23.8	18.1	31.5	40
Anaheim-Santa Ana-Garden Grove, Calif.	193	88	119.3	1.8	0.7	157.1	33-36	32.1	10.8	197.2	31-32
Atlanta, Ga.[1]	227	160	41.9	5.3	4.3	23.3	14-15	87.6	50.6	73.1	15
Baltimore, Md.	195	190	2.6	4.6	4.2	9.5	18	71.6	47.1	52.0	17
Boston, Mass.[2]	441	408	8.1	6.6	6.9	-4.3	6	104.0	75.4	37.9	9
Buffalo, N.Y.	126	135	-6.7	3.8	3.9	-3.6	21	60.3	42.1	43.2	21
Charlotte-Gastonia, N.C.[1]	86	48	79.2	1.4	1.3	7.7	42-44	19.6	13.0	50.8	49-50
Chicago, Ill.-Northwestern Ind.[3]	1,334	1,243	7.3	35.2	37.4	-5.9	2	662.2	500.6	32.3	2
Cincinnati, Ohio-Ky.-Ind.	202	189	6.9	5.7	5.5	3.6	12	94.7	71.1	33.2	13
Cleveland, Ohio	335	301	11.3	5.3	4.4	20.5	14-15	91.5	59.7	53.3	14
Columbus, Ohio[2]	112	92	21.7	2.0	1.7	17.6	30	29.3	15.4	90.3	36
Dallas-Fort Worth, Tex[4]	386	321	20.2	5.0	4.1	22.0	16	79.0	44.6	77.1	16
Dayton, Ohio	75	80	-6.2	5.9	7.7	-23.4	9-11	952.2	91.3	4.3	12
Denver-Boulder, Colo.[5]	195	167	16.8	2.3	2.0	15.0	28-29	36.8	22.4	64.3	28
Detroit, Mich.[2]	431	408	5.6	6.1	6.7	-9.0	8	117.7	85.8	37.2	7
Fort Lauderdale-Hollywood, Fla.	104	54	92.6	1.1	0.6	83.3	49-50	19.7	7.7	155.8	48
Grand Rapids, Mich.	83	80	3.8	1.3	1.4	-7.1	45-47	22.3	14.9	49.7	42
Hartford, Conn.[2]	99	73	33.6	1.9	1.8	5.6	31-32	30.6	22.2	37.8	34
Houston, Tex[2]	245	182	34.6	2.9	1.9	52.6	23-24	43.3	23.6	83.5	26
Indianapolis, Ind.	143	133	7.5	1.9	2.1	-9.5	31-32	31.3	23.5	33.2	33
Jersey City, N.J.	57	58	-1.7	2.5	2.8	-10.7	27	42.4	33.0	30.0	27
Kansas City, Mo.-Kans[2]	184	173	6.4	2.8	2.2	27.3	25-26	46.6	28.0	66.4	23
Lancaster, Pa.	45	42	7.1	1.8	1.5	20.0	33-36	24.5	17.7	38.4	39
Los Angeles-Long Beach, Calif.	1,293	1,047	23.5	15.3	13.3	15.0	3	285.0	169.0	68.6	3
Louisville, Ky-Ind[2]	93	90	3.3	4.8	4.9	-2.0	17	71.5	51.4	39.1	18
Lowell, Mass.-N.H.[2]	19	N.A.	N.A.	1.4	N.A.	N.A.	42-44	20.9	N.A.	N.A.	46-47
Memphis, Tenn-Ark.[2]	78	69	13.0	1.3	1.0	30.0	45-47	21.2	11.7	81.2	45
Miami, Fla.	266	173	53.8	3.0	1.6	87.5	22	44.4	15.8	181.0	24
Milwaukee, Wis.	207	178	16.3	5.9	5.5	7.3	9-11	104.1	63.9	62.9	8
Minneapolis-St. Paul, Minn-Wis[2]	283	235	20.4	6.9	9.4	-31.1	7	123.2	106.8	15.4	6
Nashville-Davidson, Tenn[1]	95	63	50.8	2.3	3.0	-23.3	28-29	35.9	29.7	20.9	29
Nassau-Suffolk, N.Y.[6]	338	241	40.2	4.4	4.5	-2.2	19	71.0	54.7	29.8	19
New York, N.Y.—Northeastern, N.J.[7]	3,109	3,293	-5.6	43.9	54.0	-18.7	1	825.3	707.8	16.6	1
Newark, N.J.[2]	300	287	4.5	4.1	3.6	13.9	20	66.2	46.6	42.1	20
Paterson-Clifton-Passaic, N.J.[8]	90	73	23.3	1.2	0.9	33.3	48	20.9	11.4	83.3	46-47
Peoria, Ill.	40	37	8.1	1.1	1.1	—	49-50	23.7	14.1	68.1	41
Philadelphia, Pa.-N.J.	632	553	14.3	14.1	13.9	1.4	4	226.2	143.8	57.3	4
Pittsburgh, Pa.	202	202	—	2.9	3.1	-6.5	23-24	43.4	35.2	23.3	25
Portland, Oreg.-Wash.	148	106	39.6	1.3	1.3	—	45-47	21.9	16.4	33.5	44
Providence-Pawtucket-Warwick, R.I.-Mass.[2]	131	127	3.1	1.8	2.1	-14.3	33-36	34.1	20.6	65.5	30
Richmond, Va.[2]	80	67	19.4	1.6	2.3	-30.4	39-41	29.8	27.4	8.8	35
Rochester, N.Y.[1]	121	98	23.5	2.8	2.5	12.0	25-26	55.5	37.7	47.2	22
St. Louis, Mo.-Ill.[2]	312	280	11.4	5.5	5.4	1.9	1.3	97.7	66.8	46.3	11
San Francisco-Oakland, Calif.	476	419	13.6	6.9	6.8	1.5	5	123.6	96.5	28.1	5
San Jose, Calif.	117	80	46.3	1.8	0.8	125.0	33-36	32.1	10.4	208.7	31-32
Scranton-Wilkes-Barre-Hazelton, Pa.[9]	65	53	18.2	1.7	1.4	21.4	37-38	25.1	14.6	71.9	38
Seattle-Everett, Wash.	156	138	13.0	1.7	1.8	-5.6	37-38	29.2	21.4	36.4	37
Springfield-Chicopee-Holyoke, Mass.[2]	71	71	—	1.4	1.7	-17.6	42-44	19.6	18.7	4.8	49-50
Washington, D.C.-Md.-Va.[2]	333	248	34.3	5.9	4.9	20.4	9-11	102.0	61.1	66.9	10

(X)-Not applicable.
N.A.-Not available.
[1]The definition of this standard metropolitan area has been revised for 1972. Data tabulated under the new 1972 definition differ by more than 5 percent from 1972 data tabulated under the old definition. Data for 1967 are based on prior census-year definitions.
[2]The definition of this standard metropolitan statistical area has been revised for 1972. Data tabulated under the new 1972 definition differ by 5 percent or less from 1972 data tabulated under the old definition. Data for 1967 are based on prior census-year definitions.
[3]Chicago, Illinois-Northwestern Indiana, Standard Consolidated Area: consists of Chicago, Ill., SMSA and Gary-Hammond-East Chicago, Ind., SMSA.
[4]Dallas SMSA was combined with Fort Worth SMSA for 1972; 1967 data have been adjusted accordingly.
[5]This SMSA changed definition in 1972; 1967 data are based on prior census-year definition.
[6]This is a new SMSA for 1972. These counties were formerly part of New York, NY-N.J. SMSA.
[7]New York, New York-Northeastern New Jersey Standard Consolidated Area: consists of Nassau-Suffolk, N.Y., SMSA; Newark, N.J., SMSA; Jersey City, N.J., SMSA; Paterson-Clifton-Passaic, N.J. SMSA; and New Brunswick-Perth Amboy-Sayreville, N.J. SMSA. Some of these SMSA's are ranked separately in this table.
[8]This SMSA changed definition in 1972; 1967 data have been adjusted accordingly.
[9]Scranton SMSA was combined with Wilkes-Barre-Hazelton, SMSA in 1972; 1967 data have been adjusted accordingly.

Source: 1972 Census of Manufactures, Bureau of the Census, U.S. Department of Commerce.

Value added by manufacture per employee showed a differential of nearly $4,000 among the 10 leading printing centers. Boston had the lowest value added per employee, amounting to $15,758; and Detroit had the highest at $19,295. Value added per employee among the 10 leading printing centers averaged $17,943 in 1972, while for the entire commercial printing industry, it averaged $16,500.

Trends Among the Top Fifty

Four additional SMSA's qualified for the top 50 ranking of U.S. commercial printing centers in 1972, while three centers included in the 1967 ranking were dropped and the Dallas and Fort Worth SMSA's were combined. SMSA's added to the 50 largest centers listing were Fort Lauderdale-Hollywood, Florida; Nassau-Suffolk, New York; Lowell, Massachusetts-New Hampshire; and Scranton-Wilkes-Barre-Hazle ton, Pennsylvania. Those dropped were Birmingham, Alabama; New Haven, Connecticut; and Omaha, Nebraska.

The 50 U.S. metropolitan areas showed slower growth rates for number of establishments, employment and value added per employee during the 1967-72 span than the entire commercial printing industry. Although only four of the 50 printing centers showed a decline in their number of establishments during this period, and while the number of plants in these 50 SMSA's increased by 1,400 and accounted for 54% of the Nation's increase in printing establishments, the 11% growth rate for these 50 SMSA's did not keep pace with the Nation's 13% increase in printing establishments.

SMSA's located in the South and West added plants at a faster rate in the period 1967-72 than the other regions. Among the 20 SMSA's reporting increases of more than 20% between 1967 and 1972, 12 were located in the South or West. Anaheim-Santa Ana-Garden Grove, California, more than doubled its establishment count during the 1967-72 span, and Fort Lauderdale-Hollywood, Florida, nearly doubled its number of plants. Los Angeles reported the largest gain in number of establishments, adding 246 plants in the 1967-72 span.

Only four SMSA's experienced a reduction in their number of establishments in the 1967-72 period. New York suffered a loss of 184 plants during this period; however, the remaining three SMSA's had losses of less than 10 establishments. Buffalo, New York, showed the highest decline rate (−6.7%), dropping from 135 plants in 1967 to 126 in 1972.

Although total U.S. employment for the commercial printing industry climbed 3% from 1967 to 1972, only half of the 50 largest printing centers had employment gains above 3%. In fact, total employment for the 50 SMSA's declined 2.4% during the 1967-72 span. The Albany-Schenectady-Troy, New York, SMSA recorded the largest percentage drop in employment during this period, losing 41% or 1,100 employees. Minneapolis-St. Paul also experienced a sizable decline in its labor force with a 31% drop from 9,400 in 1967 to 6,400 in 1972. Among the 50 SMSA's, New York sustained the greatest loss in employment, losing over 10,000 employees or nearly one-fifth of its 1967 labor force, in the 1967-72 span. Likewise, Chicago recorded a substantial drop in its 1967 employment figure of 37,400, declining by 2,200 employees during the 1967-72 period.

The Anaheim-Santa Ana-Garden Grove, California, SMSA experienced the highest rate of gain in employment in this period, expanding by 157% and adding 1,100 employees to its commercial printing labor force. High employment rate gains in the 1967-72 period were also reported for San Jose, California (125%); Miami, Florida (88%); and Fort Lauderdale-Hollywood, Florida (83%).

The largest employment increase among the 50 printing centers occurred in Los Angeles which added 2,000 employees to its commercial printing work force between 1967 and 1972. Miami, Florida, acquired 1,400 more employees in the 1967-72 period, and Houston, Texas, San Jose, California, and Washington, D.C., each added 1,000 employees to their commerical printing payrolls during this period.

Value added by manufacture for the entire commercial printing industry in 1972 was up 43% over its 1967 level, while the value added figure for the 50 major metropolitan printing centers trailed behind at 39%. Over two-fifths of these top 50 printing SMSA's had growth rates below the rate for the total value added by the Nation's commercial printers.

San Jose, California, tripled its value added by manufacture for commercial printing in the 1967-72 period, with value added jumping 209% from $10.4 million in 1967 to $32.1 million in 1972. Following close behind was Anaheim-Santa Ana-Garden Grove, California, with a growth rate of 197% during this period. Other SMSA's in which value added more than doubled included Miami, Florida (181%); and Fort Lauderdale-Hollywood, Florida (156%). Only the Albany-Schenectady-Troy, New York, SMSA experienced a decline in value added during the 1967-72 span, dropping 20% below its $27.6 million level in 1967. Dayton, Ohio, reported the smallest gain in value added in this period, with a 4% rise, while the Springfield-Chicopee-Holyoke, Massachusetts, SMSA followed close behind with a 5% increase.

The largest dollar gain in value added by manufacture was in Chicago where value added rose by $162 million and totaled $662 million in 1972. New York, which recorded the highest level for value added in 1972 ($852 million), ranked second in dollar increase for value added by adding $118 million in value added in the 1967-72 span. The smallest dollar amount increase in value added during this period was reported by the

Springfield-Chicopee-Holyoke, Massachusetts, SMSA whose value added increased by $900,000 in the 1967-72 period.

Almost half of the 50 major commercial printing SMSA's had growth rates for value added that fell below the total industry growth rate in the 1967-72 span. Thus, it appears that a slight shifting of printing activity to geographic sectors other than the 50 largest printing centers continues a trend evidenced since 1963. Although the 50 major printing centers accounted for 75% of total industry value added in 1972, they accounted for only 70% of the total industry increase in value added in the 1967-72 period.

In terms of value added by manufacture per employee, the top 50 printing centers surpassed the average value added per employee for the entire commercial printing industry. The top 50 centers had an average value added per employee of $17,475 compared to $16,555 for the entire industry. However, over half of the 50 centers had value added per employee figures in 1972 below the total industry level.

Among the top 50 SMSA's the Peoria, Illinois, area ranked first in value added per employee in 1972 with $21,545. In second place was Rochester, New York, with $19,821, and a close third was Detroit, Michigan, with $19,295. Lancaster, Pennsylvania, reported the lowest value added per employee in 1972 amounting to $13,611, and the Albany-Schenectady-Troy, New York, SMSA had the second lowest figure at $13,813.

During the 1967-1972 period, the Providence-Pawtucket-Warwick, Rhode Island-Massachusetts, SMSA recorded the highest growth rate for value added by manufacture per employee among the top 50 printing centers, with a 94% gain. Other SMSA's experiencing sizable growth rates in value added per employee in this period were Minneapolis-St. Paul, Minnesota (69%) and Peoria, Illinois (68%).

On the low end Lancaster, Pennsylvania, had a growth rate of 15% for value added per employee in the 1967-72 period. As previously reported, this SMSA also had the lowest value added per employee figure during this period. Ranking second lowest in value added per employee was Anaheim-Santa Ana-Garden Grove, California, with a 16% gain, and in third place was Houston, Texas, with a 20% increase.

In the 5-year span, the entire U.S. commercial printing industry experienced a 39% rise in value added per employee while the combined growth rate for the top 50 printing SMSA's was 43%. Three fifths of the 50 centers had growth rates equal to or above the total industry rate.

Summary

Among the 50 major U.S. printing centers several showed notable growth gains in the three statistical measures of number of establishments, number of employees and value added by manufacture. Among the fastest growing centers in the 1967-72 period were Anaheim-Santa Ana-Garden Grove, California; Fort Lauderdale-Hollywood, Florida; Houston, Texas; Miami Beach, Florida, and San Jose, California.

Printing centers showing overall slow growth during this same period included Dayton, Ohio; New York, New York; Pittsburgh, Pennsylvania; and Springfield-Chicopee-Holyoke, Massachusetts. While the number of establishments for the Albany-Schenectady-Troy, New York, and Richmond, Virginia, SMSA's showed moderate increases, employment and value added measures for those two SMSA's fell significantly below most of the SMSA's in the 1967-72 period.

Although many of the 50 centers experienced substantial increases in the 5-year span, the 50 printing SMSA's did not keep pace with the growth record of the entire commercial printing industry. Employment in the 50 major printing centers suffered the greatest loss in the 1967-72 period, declining by 2% yet the number of establishments climbed 11% and value added rose 39%. It appears that commercial printing activity in the 50 major centers during the 1967-72 span was becoming less concentrated, athough 1972 Census data indicates the top 50 printing centers made a sizable contribution to overall U.S. commercial printing growth.

PROJECTIONS OF OUTPUT AND EMPLOYMENT IN THE U.S. GRAPHIC ARTS INDUSTRY

By William S. Lofquist

A primary responsibility of the U.S. Department of Labor's Bureau of Labor Statistics (BLS) is the forecasting of employment and output in major sectors of the U.S. economy. In 1975 the BLS issued a comprehensive report containing projections of employment by industry for 1980 and 1985, based on projections of the labor force, potential gross national product (GNP), the composition of income and demand GNP, interindustry relationships, and projections of industry output, average hours, output per man-hour, and employment. The U.S. printing and publishing industry was included in this study.

The BLS report is part of a comprehensive coordinated program of the Bureau of Labor Statistics to provide information on what the U.S. economy might be like in coming years under certain assumptions. The primary use of the employment projections by industry is to provide a framework for the occupational outlook program of the Bureau. The projections of potential GNP serve as a benchmark against which to measure the performance of the economy. The detailed projections of demand, output, and employment have important uses in providing insight into the effects of alternative government policies on the composition of demand, on employment by industry, and, through the use of an industry-occupational matrix, on employment by occupation. Further, for business firms, these projections are an important source of information in developing long-range capital investment programs and in understanding the changing structure of markets.

Background

In preparing their forecasts, the BLS made the following assumptions directly affecting the rate of economic growth:

1. *Population.* Bureau of the Census Series E projections are assumed. Series E assumes that fertility rates remain at the replacement level.
2. *Labor force* is based on the population and assumed participation rates. Future participation rates for each age-sex group (with differentiation made for women with and without children under 5) are derived by extrapolating the trend for the period 1955-72 and tapering this trend so that in 50 years all changes are reduced to approximately zero.
3. *Average annual hours* (paid) are assumed to decline by 0.5% a year in the agricultural sector; in the private nonagricultural sector they are assumed to decline by 0.3% a year.
4. *Productivity* in the private nonfarm economy is assumed to grow at its long-term rate—2.7% a year. The shortfall in productivity for the recent period, 1968-72, compared to the long-run trend, will be made up by 1980. The annual trend rate of 5.5% for the farm sector is assumed to continue throughout the projection period.

Personal Consumption Expenditures

In addition to the assumptions described above, the BLS staff considered at length the significant factors comprising economic demand. Perhaps the most important factor, to the nation's printers and publishers, is the trend in personal consumption expenditures (PCE). As the largest component of demand GNP, consumer expenditures during the postwar period have varied as a proportion of GNP from 60 to 66% (measured in 1963 dollars). The projections of PCE for 1980 and 1985 fall into this range (65.1% of GNP in 1980 and 65.3% in 1985). In general, because of the size of PCE, the growth pattern follows closely the GNP growth path, particularly over the longer run. This close relationship to GNP is an important factor, particularly during the projected slowdown in GNP growth in the 1980-85 period.

Growth in total consumer expenditures. The growth of PCE was faster on average during the 1960's, at 4.5% a year, than during the 1950's (3.5%). Over the 1955-68 period the growth was 4.0%. The projected growth in consumer expenditures for 1968-80 suggests a pattern closer to that of the 1960's—increasing at an annual rate of 4.3% a year. Since PCE did not grow as rapidly between 1968 and 1972, a 4.6% annual growth rate from 1972 is implied to reach the 1980 projected level of consumer expenditures. After 1980, the slowdown in the growth of GNP is accompanied by a corresponding deceleration of the growth of PCE to an average rate of 3.3% annually, or a rate closer to the pattern in the 1950's.

Part of the growth in PCE is due to an increase in population, i.e., in the number of consumers. However, most of the growth is due to an increase in consumption per individual. Between 1955 and 1968, PCE per capita grew at an average annual rate of 2.4% or from a level of $1,755 to $2,401 per capita (in 1963 dollars). By 1980 the projections show $3,569 per capita consumption and by

1985, $427 above that level, or $3,996 per capita. Since these figures are adjusted for price change, they suggest how much our standard of living has increased and is expected to continue to improve.

The trend in terms of the number of households is somewhat different because the growth in households lags significantly behind population growth. The 1955-68 growth rate of households was about 1.8% a year. This period had a corresponding 2.1% growth of consumption per household. From 1968 to 1980, the growth of average consumption per household is projected at a slightly faster rate, 2.5% a year, though the number of households continues to increase at the 1955-68 rate. Household formation slows slightly in the 1980-85 period to an annual rate of 1.7% while the marked slowdown in the expansion of PCE results in a 1.6% growth rate for personal consumption expenditures per household.

Industry Output and Employment Data

Projections of output and employment for the U.S. graphic arts industry are shown in tables 7 and 8. Table 7 provides aggregate statistics on U.S. publishing (newspapers, periodicals, books, catalogs, directories and newsletters) while table 8 records data on the U.S. printing industry (commercial printing, business forms, greeting cards, looseleaf binders, blankbooks, bookbinding and printing trade services). In both tables domestic output is expressed in 1963 (deflated) dollars.

In order to facilitate analysis of the two tables, the BLS staff emphasizes that the following definitions be kept in mind:

Total industry output represents the sum of the demand components or supply components for an industry. It is the total production by the establishments classified in the industry, including both their primary and secondary products or services, the producer's value of the secondary products or services of other industries which are primary to the given industry, and the domestic port value of substitutable imports, which are distributed as part of the output of the given industry.

This total output equals the sum of the following elements: material and service inputs to production, valued added, producers' value of the secondary products or services which are primary to the given industry, and the domestic port value of substitutable imports.

A primary product or service of an industry is that particular output of an industry which is the principal proportion of all its products or services. A secondary product or service is that part of an industry's output which is not its principal product or service and which is classified in other industries.

Gross duplicated domestic output (domestic output) represents the total output of an industry minus any transferred imports, valued at domestic port value.

Tranferred imports represents inputs to production which are substitutable for domestically produced goods and services; these imports are treated like secondary products. They are shown as if pruchased by the industry producing the substitutable item and added to that industry's total output.

Final demand represents the sum of purchase of goods and services by persons, investors, foreigners, and government.

Intermediate demand represents the sum of purchases of goods and services which are further processed before being sold.

Personal consumption expenditures (PCE) represents the purchases of goods and services by individuals.

Investment represents the capital expenditures of an industry.

Federal represents the purchases of goods and services by the Federal Government. If the Federal Government sells a product, such as electricity, the product is first sold (transferred) to the comparable private industry and only then sold to the consumer. The intial sale by the Federal Government is considered a negative purchase from the private industry. If there is no comparable private industry, for example, Post Office enterprises, the consumer pruchases the service directly from the Federal Government. Excluded from Federal purchases are transfer payments such as social security, grants-in-aid to State and local governments, and interest payments.

State and local represents the purchases of goods and services by State and local governments. If State and local governments sell a product, such as water and other sanitary services, the product is first sold (transferred) to the comparable private industry and only then sold to the consumer.

The initital sale by the State or local government is considered a negative purchase from the private industry.

Civilian jobs, or employment, represents the number of jobs within an industry and includes wage and salary workers, self-employed individuals, and unpaid family workers. An individual is counted in these data as many times as the number of jobs held.

Average annual rates of change (percent) are computed as compound interest rates between terminal years.

Table 7.—U.S. Publishing Industry

(SIC 271, 272, 273, 274)

Gross Duplicated Domestic Output, Civilian Jobs, and Wage and Salary Jobs, 1958-72 and Projected for 1980 and 1985

Year	Domestic (millions of 1963 dollars)	Employment (thousands of jobs)	
		Total jobs	Wage and salary jobs
Historical:			
1958	8,013	501	472
1959	8,789	508	479
1960	9,051	519	490
1961	9,067	522	493
1962	9,228	524	495
1963	9,441	523	494
1964	10,140	536	507
1965	10,702	552	523
1966	11,435	564	539
1967	12,059	576	552
1968	12,332	590	562
1969	13,061	601	575
1970	12,365	610	584
1971	12,689	597	571
1972	12,826	598	572
Projected:			
1980	18,033	700	675
1985	20,454	721	700
	Average annual rates of change (percent)		
Historical:			
1956-72	3.4	1.3	1.4
1959-57	3.8	1.7	1.8
Projected:			
1972-80	4.4	2.0	2.1
1968-85	3.0	1.2	1.3
1968-80	3.2	1.4	1.5
1980-85	2.6	0.6	0.7

Total industry output by major demand and supply components for 1963 and 1970 and projected for 1980 and 1985

Major component	Millions of 1963 dollars				Percent distribution			
	1963	1970	1980	1985	1963	1970	1980	1985
Total demand	9,441	12,365	18,033	20,454	100.0	100.0	100.0	100.0
Final demand	3,270	4,512	6,774	7,672	34.6	36.5	37.6	37.5
Personal consumption	2,735	3,538	5,148	5,949	29.0	28.6	28.5	29.1
Investment	68	112	137	132	0.7	0 9	0.8	0.6
Exports	163	195	337	383	1.7	1.6	1.9	1.9
Federal	16	-5	-38	-43	0.2	-0.0	-0.2	-0.2
State and local	289	672	1,190	1,251	3.1	5.4	6.6	6.1
Intermediate demand	6,171	7,853	11,259	12,782	65.4	63.5	62.4	62.5
Total supply	9,441	12,365	18,033	20,454	100.0	100.0	100.0	100.0
Transferral imports	0	0	0	0	0.0	0.0	0.0	0.0
Domestic output	9,441	12,365	18,033	20,454	100.0	100.0	100.0	100.0

Industry Description:

A.This industry includes firms which engage in all the operations necessary for issuing newspapers, magazines, books, and related materials.

B.The output is accounted for as sales to advertisers and as final demand by private consumers.

Source: U.S. Department of Labor, Bureau of Labor Statistics.

Table 8.—U.S. Printing Industry

[SIC 275, 276, 277, 278, 279]

Year	Domestic (millions of 1963 dollars)	Employment (thousands of jobs)	
		Total jobs	Wage and salary jobs
Historical:			
1958	6,248	459	401
1959	6,687	467	410
1960	6,875	479	421
1961	7,087	484	425
1962	7,383	491	432
1963	7,371	494	436
1964	7,807	503	445
1965	8,556	515	457
1966	9,217	532	478
1967	9,394	547	496
1968	9,768	560	503
1969	10,234	575	519
1970	10,361	563	517
1971	10,218	552	500
1972	10,541	561	508
Projected:			
1980	16,391	668	620
1985	19,165	690	646
	Average annual rates of change (percent)		
Historical:			
1958-72	3.8	1.4	1.7
1959-68	4.3	2.0	2.3
Projected:			
1972-80	5.7	2.2	2.5
1968-85	4.0	1.2	1.5
1968-80	4.4	1.5	1.8
1980-85	3.2	0.7	0.8

Total industry output by major demand and supply components for 1963 and 1970 and projected for 1980 and 1985

Major component	Millions of 1963 dollars				Percent distribution			
	1963	1970	1980	1985	1963	1970	1980	1985
Total demand	7,378	10,362	16,393	19,167	100.0	100.0	100.0	100.0
Final demand	730	994	1,896	2,348	9.9	9.6	11.6	12.3
Personal consumption	424	517	1,070	1,283	5.7	5.0	6.5	6.7
Investment	41	68	84	81	0.6	0.7	0.5	0.4
Exports	2	61	143	186	0.0	0.6	0.9	1.0
Federal	101	-10	-56	-75	1.4	-0.1	-0.3	-0.4
State and local	162	358	655	873	2.2	3.5	4.0	4.6
Intermediate demand	6,648	9,368	14,497	16,819	90.1	90.4	88.4	87.7
Total supply	7,378	10,362	16,393	19,167	100.0	100.0	100.0	100.0
Transferred imports	7	1	2	2	0.1	0.0	0.0	0.0
Domestic output	7,371	10,361	16,391	19,165	99.9	100.0	100.0	100.0

Industry Description:

A. This industry encompasses firms engaged in printing by a variety of common processes and in performing services for the printing and publishing trades.

B. The output is consumed mainly in the form of advertising and as office supplies. A large share is also directed to the publishing industry.

Source: U.S. Department of Labor, Bureau of Labor Statistics.

The BLS outlook for the U.S. publishing industry (table 7) indicates relatively modest growth in both demand and employment through 1980 and 1985. Industry employment is expected to reach 700,000 by 1980 and 721,000 by 1985. Thus, over the period 1972-85, approximately 123,000 new employees are expected to enter the graphic arts field, an increase of 21% or about 1.4% per year. This employment increase is slightly higher than the 1.3% per year employment gain recorded between 1958 and 1972.

The BLS also projects higher output by the U.S. publishing industry for the period 1972-85, in comparison with output over the 1958-72 span. With the data adjusted to 1963 dollars, the annual rate of output growth between 1972 and 1985 is projected at 3.7% per year; in contrast, output for the period 1958-72 averaged 3.4% per year. By 1985 the Bureau foresees slightly greater output of published products going to the personal consumption sector of the economy rather than what BLS terms the intermediate demand sector (for the publishing industry, intermediate demand would reflect the business community's advertising in newspapers, periodicals, catalogs and other publications). Revenues from the personal consumption of published products should increase to 37.5% by 1985 vs. the 34.6% recorded in 1963. Intermediate demand's revenue contribution should decline to 62.5% in 1985 from 65.4% in 1963.

Table 8 provides BLS projections of output and employment on the nation's printing industry. Employment should reach 690,000 by 1985, representing a gain of 129,000 jobs to the printing industrys' workforce over 1972's 561,000 employees. This 23% increase in employment over the period 1972-84 averages out at 1.6% per year, slightly higher than the 1.4% projected by BLS for the U.S. publishing industry. Domestic output of the printing industry is expected to reach $19.2 billion in 1985, an 82% increase over the 1972 value of $10.5 billion (both figures expressed in 1963 dollars). This gain in output averages 4.7% per annum, significantly above the 3.7% per year value BLS projects for the U.S. publishing industry. The anticipated growth of the printing industry over the period 1972-1985 compares favorably with the industry's growth between 1958 and 1972. Employment gains in the 1958-72 span averaged 1.4% per year vs. the 1.6% per year growth foreseen in the period 1972-85. Output of the printing industry between 1958 and 1972 averaged 3.8% per year in this span vs. a BLS projected 4.7% per annum growth in the 1972-85 time frame.

Summary

Projections of U.S. printing and publishing employment and output between 1972 and 1985 indicate a pattern of industry growth that consistently exceeds the gains recorded over the period 1958-72. The projections, issued by the U.S. Department of Labor's Bureau of Labor Statistics, point to higher rates of growth for the nation's printers in comparison to the publishing sector. Both industries, however, are expected to keep pace with growth of the total economy, and continue to meet the selective needs of the nation's business, government and consumer markets.

Copies of *The Structure of The U.S. Economy in 1980 and 1985,* Bulletin 1831, prepared by the Bureau of Labor Statistics, may be obtained through either BLS Regional Offices or Government Printing Office Bookstores, or by writing to the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Price of the publication is 85 cents.

STATISTICAL SERIES

Table S-1.—U.S. Exports of Books, Periodicals, Other Printed Matter, Looseleaf Binders, and Printing Plates, January-March 1976

[Schedule B Nos. 6423010—6423030, 7182230, 8921110—8929100, 8929400, 8929820—8929850, 8922410]

Description and Schedule B Number	January-March 1976	Percent change from January-March 1975
Grand total	$143,671,039	+9.8
Printing plates and cuts (all processes) (7182230)	961,115	-20.7
Printed matter, total	142,709,924	+10.1
Manifold business forms (6423010)	550,380	+17.1
Albums and blankbooks, except business forms (6423020)	889,992	+59.8
Looseleaf binders (6423030)	318,101	+27.5
Maps, charts, atlases, and globes (8921300)	948,641	+11.9
Bound periodicals and newspapers (multiple issues) (8921160)	2,995,308	-0.5
Newspapers, unbound (8922010)	1,271,541	+61.5
Periodicals, business and professional (8922030)	957,268	-47.0
Periodicals, except business and professional (8922040)	32,274,290	+5.3
Music in books and sheets (8923010, 8923020)	1,378,160	+16.0
Transfers (decalcomanias) (8924100)	2,703,225	+47.7
Picture postcards, except greeting cards (8924210)	131,340	-31.7
Greeting cards, (8924220)	815,439	-6.2
Paper and paperboard labels and wrappers (8929100)	3,151,225	+28.0
Calendars, including calendar blocks, of paper (8929400)	216,280	+38.1
Advertising printed matter (8929820)	6,398,426	+13.4
Catalogs and directories (8929830)	1,279,855	-4.2
Business service publications (8929840)	74,827	-42.8
Playing cards (8922410)	1,307,980	+3.2
Printed matter, n.e.c. (8929850)	15,292,716	+17.5
Books, total	69,754,930	+10.5
Textbooks, workbooks and standardized tests (8921110)	14,154,392	-1.2
Technical, scientific, and professional books, except school textbooks (8921120)	11,312,226	+8.8
Bibles, Testaments, and other religious books (8921130)	3,383,980	-7.4
Dictionaries (8921140)	973,997	+0.4
Encyclopedias (8921150)	8,600,853	-6.5
Books, n.e.c. (8921170)	29,832,888	+26.9
Children's picture and painting books (8921200)	1,496,594	+37.9

Note: Data do not include individual shipments valued under $250.

n.e.c.—Not elsewhere classified.

Source: U.S. Department of Commerce, Bureau of the Census.

Table S-2.—U.S. Exports of Books Periodicals, Other Printed Matter, Looseleaf Binders, and Printing Plates, January-March 1976

[Schedule B Nos. 6423010—6423030, 7182230, 8921110—8929100, 8929400, 8929820—8929850, 8942410]

Principal markets	January-March 1976	Percent change from January-March 1975	Principal markets	January-March 1976	Percent change from January-March 1975
Australia	$9,350,486	-13.0	Mexico	$4,992,367	+24.7
Belgium-Luxembourg	862,247	+2.3	Netherlands	3,401,056	+7.8
Brazil	1,091,046	-10.2	New Zealand	1,024,180	-30.0
Canada	72,918,145	+23.0	Nigeria	285,828	-20.8
Columbia	458,399	+3.7	Panama	1,161,174	+6.8
Denmark	1,837,529	+45.0	Peru	402,787	-30.4
Dominican Republic	623,681	+32.3	Philippines	977,259	-18.0
France	2,226,158	+8.7	Republic of South Africa	1,859,829	-32.7
Hong Kong	776,895	+56.6	Saudi Arabia	581,371	0.0
India	791,185	+46.7	Singapore	1,641,435	+17.0
Indonesia	541,128	+5.8	Spain	556,010	-9.7
Iran	773,469	+24.9	Sweden	999,217	+79.7
Ireland	632,912	+51.3	Switzerland	1,012,889	-9.3
Italy	1,735,821	+36.6	United Kingdom	12,297,700	-13.9
Jamaica	536,522	n.a.	Venezuela	2,100,169	+11.8
Japan	4,480,688	-11.2	West Germany	2,851,903	+18.2

Note: Data do not include individual shipments valued under $250.

n.a. - Not available.

Source: U.S. Department of Commerce, Bureau of the Census.

Table S-3.—U.S. Imports of Books, Periodicals, Other Printed Matter, and Printing Plates, January-March 1976

[TSUSA Nos. 2565600-2566000, 2700500-2701500, 2702520-2702580, 2704500, 2705000, 2705500, 2706300, 2707000, 2708500, 2731000, 2733000, 2733500, 2736500-2743500, 2746000-2749000, 6683800, 7342500, 7375200]

Description and TSUSA number	January-March 1976	Percent change from January-March 1975
Grand total	$73,376,587	+6.3
Printing plates and cuts (all processes) (6683800)	126,612	-39.2
Printed matter, total	73,249,975	+6.4
Newspapers (2705500)	5,438,281	+31.5
Periodicals (2706300)	6,228,145	-9.3
Tourist literature about places outside the U.S. (2707000)	1,253,616	+7.6
Printed catalogs offering U.S. products (2704500, 2705000)	660,772	-42.5
Catalogs, price lists, and trade notices of foreign businesses (2708500)	1,320,909	+8.0
Music in books or sheets (2731000)	257,561	-10.6
Globes (2733000)	42,108	-59.1
Maps, charts and atlases (2733500)	614,763	-23.6
Decalcomanias in ceramic colors (2736500, 2737000)	483,907	+10.3
Other decalcomanias (2737500, 2738000)	8,376,382	+179.1
Postcards (2738500-2739500)	80,942	-13.9
Greeting cards and social and gift cards, with words (2740500)	797,942	-12.3
Other greeting cards and social and gift cards (2740000)	15,809	-86.2
Calendars of paper (2741000-2742000)	244,108	+10.4
Labels, flaps, and bands (2742300-2743500)	272,106	-13.5
Pictorial matter, lithographed, n.s.p.f. (2746000, 2746500)	3,198,051	-11.8
Photographs, exposed film, and other pictorial printed matter, n.s.p.f. (2747000)	2,161,148	+35.3
Playing cards (7342500)	675,410	+60.5
Diaries, notebooks, and address books (2565600)	820,319	-14.1
Other blankbooks (2565800)	74,495	+38.0
Albums (autograph, photograph, record, stamp) (2566000)	4,030,641	+102.8
Printed matter, n.s.p.f., suitable for use in book production (2747300)	506,236	-23.9
Other printed matter (2700500-2701500, 2747500-2749000)	2,675,075	-22.8
Books, total	33,021,249	-6.3
Bibles and prayer books (2702520)	1,166,915	-10.4
Books, foreign language (2702540)	4,021,520	+17.6
Other books, n.s.p.f., wholly or in part the work of an author who is a U.S. national or domiciliary (2702560)	735,011	-20.2
Other books (2702580)	26,951,276	-7.2
Toy books and coloring books (7375200)	146,527	-74.1

Note: Data do not include individual shipments valued under $250.

n.s.p.f.—Not especially provided for.

Source: U.S. Department of Commerce, Bureau of the Census.

Table S-4.—U.S. Imports of Books, Periodicals, Other Printed Matter, and Printing Plates, January-March 1976

[TSUSA Nos. 2565600-2566000, 2700500-2701500, 2702520-2702580, 2704500, 2705000, 2705500 2706300, 2707000-2708500, 2731000, 273300, 2733500, 2736500-2743500, 2746000-2749000, 6683800, 7342500, 7375200]

Principal suppliers	January-March 1976	Percent change from January-March 1975	Principal suppliers	January-March 1976	Percent change from January-March 1975
Austria	$175,378	-34.8	Japan	$5,544,744	+13.6
Belgium-Luxembourg	1,553,054	+6.4	Korea, Republic of	3,409,720	+135.6
Canada	15,566,307	+19.7	Mexico	3,421,678	+54.6
China (Taiwan)	386,703	+26.4	Netherlands	2,243,306	-20.6
Colombia	355,230	-42.7	Singapore	180,940	-56.4
Denmark	311,312	-13.7	Spain	4,570,287	-19.9
France	2,646,765	+16.4	Sweden	509,251	+10.9
Hong Kong	2,240,245	+16.3	Switzerland	977,376	-39.5
Israel	477,367	-72.6	United Kingdom	18,204,171	-0.6
Italy	2,637,533	-6.0	West Germany	6,423,799	+35.3

Note: Data do not include individual shipments valued under $250.

Source: U.S. Department of Commerce, Bureau of the Census.

Table S-5.—Selected U.S. Statistics: Printing, Publishing, and Allied Industries, Annual Average, 1974 and 1975-76 by Quarters

Economic indicators	First quarter		Second quarter		Third quarter		Fourth quarter		Annual average
	1976[p]	1975[r]	1976	1975[r]	1976	1975[r]	1976	1975[r]	1974
NATIONAL INCOME AND PRODUCT[a]									
National income, bil. $	1,301.3	1,155.2		1,180.8		1,232.5		1,262.6	1,141.1
Compensation of employees, do.	982.6	897.1		905.4		928.2		955.1	873.0
Wages and salaries, do.	851.5	781.0		787.6		807.3		830.7	763.1
Supplements to wages, salaries, do.	181.1	116.1		117.8		120.9		124.4	110.0
Personal income, do.	1,325.2	1,203.6		1,223.8		1,261.7		1,294.5	1,154.7
Disposable personal income, do.	1,140.7	1,024.0		1,081.7		1,087.1		1,114.0	988.6
Personal consumption expenditures, do.	1,029.6	926.4		950.3		977.4		1,001.0	885.9
Gross national product, do.	1,619.2	1,433.6		1,460.6		1,528.5		1,572.9	1,406.9
Manufacturers' new plant and equipment exp, do.	50.24	49.05		48.78		47.39		46.82	45.85
PURCHASING POWER OF THE DOLLAR[a]									
As measured by:									
Wholesale prices, 1967 = $1.00	.557	.584		.578		.566		.560	.625
Consumer prices, do.	.598	.637		.627		.614		.604	.678
INDUSTRIAL PRODUCTION INDEX (FRE)[b]									
All manufacturing, 1967 = 100	118.7	109.0		110.4		112.9		116.4	124.3
PRINTING AND PUBLISHING INDUSTRIES (SIC 27)									
Production index (FRB)[b], 1967 = 100	103.7	97.1		103.9		113.0		107.8	112.1
Corporate sales[c], mil. $	9,563	8,404		8,948		8,988		9,802	8,809
Corporate net profits:[c]									
Before taxes, do.	772	530		746		818		971	745
After taxes, do.	425	285		421		436		530	411
Percent of sales	4.4	3.4		4.7		4.9		5.4	4.7
All employees, thous.	1,069.0	1,093.		1,077.6		1,069.0		1,077.0	1,112.3
Production workers, do.	625.5	648.9		634.7		628.0		633.5	670.7
Average weekly earnings, $	207.73	191.24		194.76		302.02		206.06	186.87
Average hourly earnings, $	5.57	5.20	n.a.	5.31	n.a.	5.45	n.a.	5.49	4.97
Average weekly hours	37.2	36.8		36.7		37.1		37.5	37.6
NEWSPAPERS (SIC 271)									
Advertising (64 cities)[d], mil. lines	1,140.9	958.6		1,052.6		958.6		1,130.2	*3,844.6
All employees, thous.	376.6	382.3		379.6		375.8		376.4	385.4
Production workers, do.	165.9	171.3		168.8		166.3		166.9	176.0
Average weekly earnings, $	210.54	195.17		199.56		203.56		210.26	190.70
Average hourly earnings, $	6.18	5.72		5.82		5.92		6.05	5.48
Average weekly hours	34.1	34.1		34.3		34.4		34.7	34.8
PERIODICALS (SIC 272)									
Advertising cost, total[e], mil. $	332.8	297.5		345.9		284.5		408.5	*1,372.3
All employees, thous.	69.7	69.4		68.5		69.2		70.1	68.4
Production workers, do.	18.4	19.8		18.6		18.1		18.4	19.7
Average weekly earnings, $	215.08	202.76		202.29		210.76		208.48	205.14
Average hourly earnings, $	5.68	5.30		5.31		5.44		5.48	5.26
Average weekly hours	37.9	38.2		38.1		38.8		38.1	39.0
BOOKS (SIC 273)									
All employees, thous.	87.4	94.8		93.1		90.4		90.2	94.2
Production workers, do.	47.1	51.8		50.2		48.0		47.5	52.1
Average weekly earnings, $	182.30	167.20		169.48		174.8		177.07	166.45
Average hourly earnings, $	4.79	4.42		4.52		4.69		4.76	4.29
Average weekly hours	38.0	36.8		37.5		37.7		37.2	38.8
COMMERCIAL PRINTING (SIC 275)									
All employees, thous.	357.9	361.7		356.8		355.3		360.2	370.3
Production workers, do.	268.6	273.3		268.9		267.7		271.6	282.6
Average weekly earnings, $	213.25	196.17		200.48		211.04		213.36	191.23
Average hourly earnings, $	5.55	5.20		5.34		5.53		5.51	4.98
Average weekly hours	38.4	37.7		37.6		38.2		38.7	38.4

See footnotes at end of table.

Table S-5.—Selected U.S. Statistics: Printing, Publishing, and Allied Industries, Annual Average, 1974 and 1975-76 by Quarters—Con.

Economic indicators		First quarter		Second quarter		Third quarter		Fourth quarter		Annual average
		1976[p]	1975[r]	1976	1975[r]	1976	1975[r]	1976	1975[r]	1974
COMM. PRTG., EXC. LITHO. (SIC 2751)										
All employees	thous	200.8	202.9		200.7		201.6		203.7	208.1
Production workers	do	152.7	155.8		153.8		154.5		156.0	161.9
Average weekly earnings	$	204.96	189.30		195.38		205.05		205.62	183.74
Average hourly earnings	$	5.37	5.04		5.21		5.41		5.34	4.81
Average weekly hours		38.2	37.5		37.5		37.9		38.5	38.2
COMM. PRTG., LITHO. (SCI 2752)										
All employees	thous	146.4	147.8		145.4		144.2		146.5	151.5
Production workers	do	108.1	109.4		107.2		106.1		108.2	112.9
Average weekly earnings	$	225.93	207.53		208.68		221.39		225.44	203.81
Average hourly earnings	$	5.87	5.49		5.58		5.74		5.81	5.28
Average weekly hours		38.5	37.8		37.4		38.6		38.8	38.6
BOOKBINDING AND RELATED INDUSTRIES (SIC 278)										
All employees	thous	49.0	50.6		49.2		49.2		49.2	55.4
Production workers	do	40.0	41.7		40.4		40.5		40.3	46.6
Average weekly earnings	$	165.66	148.65		152.46		156.41		162.95	142.49
Average hourly earnings	$	4.31	3.95		4.03		4.08		4.21	3.73
Average weekly hours		38.5	37.6		37.8		38.3		38.7	38.2
OTHER PRINTING AND PUBLISHING INDUSTRIES (SIC 274,6, 7, 9)										
All employees	thous	128.3	134.5		130.5		129.1		130.8	138.6
Production workers	do	86.2	90.9		87.8		87.4		88.7	93.6
Average weekly earnings	$	212.91	200.61	n.a.	201.36	n.a.	204.78	n.a.	212.49	196.06
Average hourly earnings	$	5.54	5.28		5.36		5.44		5.46	5.04
Average weekly hours		38.4	38.0		37.6		37.7		38.9	38.9
PAPER PRODUCTION, CONSUMPTION, INVENTORY AND PRICES										
Newsprint:										
Used by publisher[f]	thous. tons	1,534	1,528		1,638		1,504		1,694	*7,022
Publishers' inventory[f]	do	668	955		1,032		1,080		851	827
Price, rolls, contract (BLS)	$	259.82	253.28		257.32		257.32		257.32	210.71
PAPER										
Production:[g]										
Groundwood, uncoated:										
Publication and printing	short tons	356,652	323,584		274,435		298,953		325,768	*1,255,304
Coated, printing and converting:										
Coated, one side	do	134,865	106,488		107,334		104,463		125,504	*500,310
Coated, two sides	do	836,689	723,839		659,852		684,796		734,336	*3,477,217
Book, uncoated:										
Publication and printing	do	510,689	343,422		365,505		403,857		472,274	*1,972,597
Writing:										
Chemical wood pulp	do	754,320	560,569		596,469		677,408		792,340	*3,405,697
Wholesale price index (BLS):										
Form bond, 12 lb	1973 = 100	147.6	147.7		143.2		142.6		145.1	128.7
Book paper, No. 3 plain, offset	1967 = 100	161.5	170.9		153.9		151.6		155.5	153.7
Wood bond	do	154.5	149.8		149.2		147.4		147.4	139.5

Note: Employment and earnings data from Department of Labor, Bureau of Labor Statistics (BLS). Data for most recent quarter are preliminary. FRB-Federal Reserve Board. [r]Revised. [p]Preliminary. n.a.—Not available. *Cumulative. [a]*Survey of Current Business, Bureau of Economic Analysis.* Quarterly data are seasonally adjusted at annual rates. [b]Without seasonal adjustment. [c] *Quarterly Financial Report,* Federal Trade Commission. Beginning 1974 data reflect a revision in statistical collection procedures; hence, are not strictly comparable with earlier periods. [d]Media Records, Inc. Data are three months totals. [e]Publishers' Information Bureau, Inc. Data are three months totals. [f]American Newspaper Publishers' Assn., approximately 75% of total newsprint used. Consumption data are three months total. Beginning 1974, data reflect reduction in basis weight of newsprint from 32 to 30 pounds for 500 sheets, 24" x 36". Data for prior years not converted, hence, not strictly comparable. [g]Bureau of the Census. Data are three months totals. Exports generally equal imports, production usually equivalent to consumption.

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